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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,287	09/10/2003	Wen-Chang Kuo	N1085-00011	5330
54657	7590	01/31/2008		
DUANE MORRIS LLP IP DEPARTMENT (TSMC) 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103-4196				
EXAMINER				
KARDOS, NEIL R				
ART UNIT		PAPER NUMBER		
3623				
MAIL DATE		DELIVERY MODE		
01/31/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/660,287

**Applicant(s)**

KUO ET AL.

**Examiner**

Neil R. Kardos

**Art Unit**

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This is a non-final first Office action on the merits. Currently, claims 1-40 are pending.

***Oath/Declaration***

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because it does not identify the citizenship of each inventor.

***Claim Objections***

3. Claims 37 and 40 are objected to because of the following informalities: Claim dependency.

As per claim 37, there is a lack of antecedent basis for the "materials database." Examiner believes Applicant erred in depending claim 37 from claim 35. Examiner believes that Applicant meant to depend claim 37 from claim 36, which contains antecedent basis for the materials database. Appropriate correction is required.

As per claim 40, Examiner believes that Applicant erred in depending claim 40 from claim 30. Examiner believes that Applicant meant to depend claim 40 from claim 32. Appropriate correction is required if necessary.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4-8, 10, 12-14, 18-19, 21, 24-28, 30, 32-34, and 38-39 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent number 4,847,795 to Baker et al (“Baker”).

As per claims 1 and 21, Baker discloses a method and system with “means for” (see figure 1; column 2: lines 33-56, disclosing a testing station with a computer) providing instructions in addressing an equipment problem comprising the following steps:

- checking an indication of an equipment problem against a solution database to identify at least one suggested solution to said equipment problem (see column 2: lines 51-53; column 2: lines 60-63, disclosing using prior repair activity to determine a repair procedure; column 3: lines 18-22, disclosing updating information in a repair knowledge base);
- providing a suggested solution from said at least one suggested solution for implementation (see column 2: lines 51-53, disclosing generating a recommended repair procedure based on test failure data); and
- recording an actual fix solution implemented in association with said equipment problem (see column 2: lines 62-65, disclosing selecting a successful repair procedure to be stored for future use).

As per claims 4 and 24, Baker discloses a method and system wherein a plurality of suggested solutions are identified, said method further comprising the step of identifying a preferred solution from said plurality of suggested solutions (see column 2: lines 60-62, disclosing recommending the repair which is most likely to fix a defect; column 4: lines 53-59, disclosing ranking solutions; column 5: lines 15-27, disclosing determining the best solution).

As per claims 5 and 25, Baker discloses a method and system wherein said identifying a preferred solution step includes the step of selecting said preferred solution based at least in part on an efficiency rating associated with said preferred solution (see column 4: line 53 through column 5: line 14, disclosing ordering solutions based on efficiency; see also column 4: lines 46-52, disclosing determining a rating associating a solution with a given failure).

As per claims 6 and 26, Baker discloses a method and system further comprising the step of recording said actual fix solution into said solution database and associating said actual fix solution with said equipment problem (see column 2: lines 62-65, disclosing selecting a successful repair procedure to be stored for future use; column 4: lines 46-52, disclosing associating a repair procedure with a particular failure).

As per claims 7 and 27, Baker discloses a method and system further comprising the step of recording said actual fix solution into said solution database as a suggested solution only after said actual fix solution meets a minimum efficiency rating (see column 6: lines 12-27, disclosing certain requirements that must be met before a solution is stored in the knowledge base).

As per claims 8 and 28, Baker discloses a method and system wherein said providing step includes the step of providing a notification to an equipment engineer, wherein said actual fix solution is implemented by said equipment engineer (see column 2: line 65 through column 3:

line 1, disclosing notifying a user of the diagnosis and recommendation so that the user can determine whether or not to implement the recommendation).

As per claims 10 and 30, Baker discloses a method and system wherein said actual fix solution implemented in connection with said equipment problem is said provided suggested solution (see column 2: line 65 through column 3: line 1, disclosing notifying a user of the diagnosis and recommendation so that the user can implement the recommendation; column 8: lines 36-38, disclosing retesting the equipment after it has been reworked as per the recommendation).

As per claims 12 and 32, Baker discloses a method and system with “means for” (see figure 1; column 2: lines 33-56, disclosing a testing station with a computer) providing instruction in addressing an equipment problem comprising the following steps:

- recording an actual fix solution implemented in association with said equipment problem (see column 2: lines 62-65, disclosing learning and storing a successful repair procedure; column 6: lines 12-27);
- monitoring an efficiency rating of said actual fix solution in addressing said equipment problem (see column 6: lines 12-27, disclosing monitoring to determine whether the solution was successful); and
- when an efficiency rating associated with said actual fix solution exceeds a minimum efficiency rating, making said actual fix solution available as a suggested solution to said equipment problem (see column 6: lines 12-27, disclosing storing the recommended solution only if it was successful).

As per claims 13 and 33, Baker discloses a method and system further comprising the steps of:

- checking a received indication of an equipment problem against a solution database to identify at least one suggested solution to said received equipment problem (see column 2: lines 51-53; column 2: lines 60-63, disclosing using prior repair activity to determine a repair procedure; column 3: lines 18-22, disclosing updating information in a repair knowledge base); and
- providing a suggested solution from said at least one suggested solution to an equipment engineer(see column 2: lines 51-53, disclosing generating a recommended repair procedure based on test failure data).

As per claims 14 and 34, Baker discloses a method and system wherein said making step includes the step of recording said actual fix solution in said solution database (see column 2: lines 62-65, disclosing selecting a successful repair procedure to be stored for future use).

As per claims 18 and 38, Baker discloses a method and system wherein a plurality of suggested solutions are identified, said method further comprising the steps of identifying a preferred solution from said plurality of suggested solutions (see column 2: lines 60-62, disclosing recommending the repair which is most likely to fix a defect; column 4: lines 53-59, disclosing ranking solutions; column 5: lines 15-27, disclosing determining the best solution).

As per claims 19 and 39, Baker discloses a method and system wherein said identifying a preferred solution step includes the step of selecting said preferred solution based at least in part on an efficiency rating associated with said preferred solution (see column 4: line 53 through

column 5: line 14, disclosing ordering solutions based on efficiency; see also column 4: lines 46-52, disclosing determining a rating associating a solution with a given failure).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-3, 15-17, 22-23, and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker in view of U.S. pre-grant publication number 2004/0019537 to Luo et al ("Luo").

As per claims 2 and 22, Baker does not explicitly disclose a method or system further comprising the steps of: checking said suggested solution against a materials database, said materials database including an inventory of materials needed to implement said suggested solution; and alerting an equipment engineer of said needed materials.

Luo teaches checking requests against a materials database that includes inventory of materials needed to carry out that request (see figures 2-3; paragraph 19: lines 12-21; paragraphs 20 and 22) and alerting relevant individuals of needed materials (see paragraph 21: lines 6-9; paragraph 22: lines 16-18)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to check the suggested solution as disclosed in the invention of Baker against a materials database as taught by Luo. One of ordinary skill in the art would have been motivated



to do so in order to increase efficiencies and decrease costs by restocking required materials when inventory levels are low (see Luo: paragraph 2: lines 6-8).

It also would have been obvious to one of ordinary skill in the art to notify individuals of needed materials as taught by Luo. One of ordinary skill in the art would have been motivated to do so for the reasons stated in the preceding paragraph.

As per claims 3 and 23, Baker does not disclose a method and system wherein said materials database further includes an indication of availability of said materials, said method further comprising the step of alerting said equipment engineer of said availability.

Luo teaches keeping track of inventory levels and alerting individuals of those inventory levels (see paragraph 16: lines 11-23; paragraph 19: lines 12-21; paragraphs 20 and 22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include tracking of inventory levels as taught by Luo in the invention of Baker. One of ordinary skill in the art would have been motivated to do so in order to increase efficiency by restocking materials when inventory levels are low (see Luo: paragraph 2: lines 6-8).

As per claims 15 and 35, Baker does not explicitly disclose a method and system further comprising the step of associating said actual fix solution with materials used in said actual fix solution.

Luo teaches associating request with the materials used in that request (see paragraph 19: lines 12-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the materials association taught by Luo with the recommended

solutions of the invention of Baker. One of ordinary skill in the art would have been motivated to do so in order to increase efficiency by restocking required materials when inventory levels are low (see Luo: paragraph 2: lines 6-8).

As per claims 16 and 36, Baker does not explicitly disclose a method and system further comprising the steps of: checking said suggested solution against a materials database, said materials database including an inventory of materials needed to implement said suggested solution; and alerting said equipment engineer of said needed materials.

Luo teaches checking requests against a materials database that includes inventory of materials needed to carry out that request (see figures 2-3; paragraph 19: lines 12-21; paragraphs 20 and 22) and alerting relevant individuals of needed materials (see paragraph 21: lines 6-9; paragraph 22: lines 16-18)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to check the suggested solution as disclosed in the invention of Baker against a materials database as taught by Luo. One of ordinary skill in the art would have been motivated to do so in order to increase efficiency by restocking required materials when inventory levels are low (see Luo: paragraph 2: lines 6-8).

It also would have been obvious to one of ordinary skill in the art to notify individuals of needed materials as taught by Luo. One of ordinary skill in the art would have been motivated to do so for the reasons stated in the preceding paragraph.

As per claims 17 and 37, Baker does not explicitly disclose a method and system wherein said materials database further includes an indication of availability of said materials, said method further comprising the step of alerting said equipment engineer of said availability.

Luo teaches keeping track of inventory levels and alerting individuals of those inventory levels (see paragraph 16: lines 11-23; paragraph 19: lines 12-21; paragraphs 20 and 22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include tracking of inventory levels as taught by Luo in the invention of Baker. One of ordinary skill in the art would have been motivated to do so in order to increase efficiency by restocking materials when inventory levels are low (see Luo: paragraph 2: lines 6-8).

6. Claims 9, 11, 20, 29, 31, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker in view of Official Notice.

As per claims 9, 20, 29 and 40, Baker does not explicitly disclose a method and system wherein said equipment problem is a problem associated with a piece of semiconductor fabrication equipment.

Examiner takes Official Notice that it would have been well known in the manufacturing arts at the time the invention was made to use the invention of Baker to test any number of different machines in order to generate recommendations for solving equipment problems. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the invention of Baker to semiconductor fabrication equipment. One of ordinary skill in the manufacturing arts would have been motivated to do so in order to directly apply the invention of Baker to increase accuracy and efficiency while reducing costs in a particular manufacturing environment

As per claims 11 and 31, Baker does not explicitly disclose a method wherein said providing step includes the step of providing said suggested solution to a wireless device in real time.

However, Baker does disclose providing solutions over a computer. Examiner takes Official Notice that it would have been well known in the computing arts at the time the invention was made to provide these solutions to a wireless hand-held computer in real time. One of ordinary skill in the art would have been motivated to do so in order to save time and thus increase efficiency by providing immediate information to an individual who cannot be stationed in front of a fixed computer at all times.

#### ***Additional Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. patent number 6,981,182 to Roddy et al, directed to analyzing fault data and recommending repairs for locomotives.
- U.S. pre-grant publication number 2004/0025082 to Roddy et al, directed to monitoring problem resolution of a machine.
- U.S. pre-grant publication number 2005/0004780 to Lin et al, directed to semiconductor tool maintenance.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil R. Kardos whose telephone number is (571) 270-3443. The examiner can normally be reached on Monday through Friday from 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Neil R. Kardos  
Examiner  
Art Unit 3623

NRK  
1/24/08

/Beth Van Doren/  
Primary Examiner, Art Unit 3623